

# PATENT COOPERATION TREATY

REC'D 19 MAY 2005

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From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

Seppo Laine Oy  
Itämerenkatu 3 B  
FIN-00180 HELSINKI  
Finland

21/7

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year)

13-05-2005

Applicant's or agent's file reference

KARVI 1 PCT

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

PCT/FI 2005/000008

International filing date (day/month/year)

05.01.2005

Priority date (day/month/year)

07.01.2004

International Patent Classification (IPC) or both national classification and IPC

C09D 1/00, C03C 17/23, C03C 17/25, C11D 17/06

Applicant

Saila Karvinen

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further opinions, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/SE  
Patent- och registreringsverket  
Box 5055  
S-102 42 STOCKHOLM

Facsimile No. +46 8 667 72 88

Authorized officer

Erika Stenroos/Els

Telephone No. +46 8 782 25 00

WRITTEN OPINION OF THE  
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International application No.

PCT/FI 2005/000008

Box No. I      Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language, \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
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PCT/FI 2005/000008

**Box No. V** Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

**1. Statement**

Novelty (N)	Claims	<u>1-10</u>	YES
	Claims	_____	NO
Inventive step (IS)	Claims	_____	YES
	Claims	<u>1-10</u>	NO
Industrial applicability (IA)	Claims	<u>1-10</u>	YES
	Claims	_____	NO

**2. Citations and explanations:**

The following documents will be discussed

D1: FR 2738836 A1

D2: US 6353581 B1

The problem to be solved according to the invention is to overcome the problems with the known technique when trying to achieve dirt repellence on for example windows. Nanocrystalline titanium dioxide is coated on the surface of of metal or glass to provide a dirt repellent layer. The titanium dioxide is spread with the help of water.

Document D1 pertains to the forming of a photocatalytic nanocrystalline titanium oxide layer on for example glass surface from an aqueous suspension of TiO<sub>2</sub>. The photocatalytic layer prevents soiling and staining of the surface. The size of the crystals is 5-70 nm.

The difference between claim 1 according to the claimed invention and D1 is that the composition is thixotropic. However, D2 describes a transparent coating composition based on silicate used for reducing the soiling tendency of facades. The composition is thixotropic, which implies that application to the substrate can be made without splashing or runs (see col. 2, lines 9-14).

Thus, the person skilled in the art, having the device known from D1 as a starting point, aiming to solve the identified problem, would with the knowledge of D2 make the composition in D1 thixotropic, and thus arrive at the invention according to claim 1. Since D1 and D2 both relate to the same technical field and no unexpected

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: BOX V

effect is obtained, the combination of what is known from D1 and D2 is considered obvious for a person skilled in the art.

Therefore, the subject-matter defined in claims 1-7 and 9-10 does not involve an inventive step.

Claim 8 is considered to involve particular detail executions obvious to a person skilled in the art. Therefore, the invention according to this claim is not considered to involve an inventive step.